Designing cities? The use of design thinking in urban planning in Finland

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Abstract. As the world's urban population grows, the impact of good city planning increases in tandem. With five billion people predicted to live in cities by 2030, the urban environment will either help or hinder sustainable global development. Engaging citizens in both planning and development is a major part in guaranteeing a safe, affordable, accessible, and sustainable urban environment. Recently, the ideas of design thinking and service design have begun to get more traction globally, but also in Finland, where a thriving industry of design thinking firms has developed. A field with much interest generated, but where little research exists, is the field of public governance. Public institutions have applied methods based in design thinking in efforts to include citizens in the planning process, to gather feedback on current efforts and projects, and to create a stronger sense of community. The aim of this paper is to further our understanding of the use of design thinking in the Finnish urban planning sector using qualitative methods. Initial results indicate a lack of an accepted standard definition of design thinking in an urban development setting, which could lead to future conflict as many public agents are now including methods derived from design thinking in their work.

1. Introduction

Almost 70 % of the global population is predicted to live in urban areas by 2050, which will increase the current urban population of 4,2 billion with almost 2,5 billion people. The challenges faced by urbanisation are multifaceted: over 430 million people will be living in megacities of 10 million residents or more, while almost 50 % of urban citizens will be living in settlements with less than 500 000 inhabitants [1]. This presents challenges for urban planning, as there is no one single or simple solution that can be applied to the global challenges that will inevitably rise with increased migration and urbanisation.

As the majority of people will be living in urban areas, the urban setting will either help or hinder a sustainable global development. Public participation in urban planning initiatives are a cornerstone of democracy and engagement with society [2], and it is therefore of utmost importance to include and engage citizens in this process. Public participation in also enjoys support from both ends of the political spectrum. On the economic left, there is a call for the inclusion of all citizens in public life, while there is a wish for strong public participation in order to achieve a slim state structure on the economic right [3]. But public participation has faced challenges in implementation and follow up, with citizens feeling left out and practitioners feeling frustrated by the apparent diminishing of their efforts to include the public in the process. In order to provide citizens with adequate venues to participate in the urban planning process, and thus fulfil the Sustainable Development Goals as put forth by the UN, especially goal 11.3, there is a need for new approaches to public participation.

Methodologies of user-centric research have been used widely both by academia and industry to understand the underlaying motivations and needs of target groups. The concepts of design thinking and service design, originally from the field of industrial design and art, have been adapted in all sorts of industries, from finance to architecture [4]. In goods-focused industries, the aim of this approach is to produce products and services that meet user expectations and, moreover, meet the latent needs of users, following the trend of how the media industry shifted from a goods-dominant-logic to a service-dominant-logic [5]. The same kind of shift has been seen in many industry sectors – the transformation towards value-based and service-based thinking. This *servitisation* can be seen as a development path that an organisation takes when developing new capabilities aiming to provide services and solutions to complement their existing product portfolio. In urban planning there are no physical goods, but the service is rather the urban environment and the things we include to the environment. Nevertheless, the servitisation process is still key to develop the capabilities needed for resource efficiency planning, understanding user needs, and both identify and separate the underlaying needs from wishes.

Design thinking has become an established field of study and practice during the last decade, in both academia and industry, as evidenced by a multitude of academic studies, both qualitative and quantitative, as well as discussions and presentations emerging from industry related to the concepts [6,7]. This has also been the case in Finland, where a thriving industry of design thinking firms has developed and a growing number of educational institutions are offering courses and degrees related to design thinking [8]. A growing interest for design thinking concepts among Finnish public actors in general, and the urban planning sector in particular, could help form our understanding of how design thinking can influence urban planning practices and public participation in other contexts as well as in a Finnish one.

As the inclusion of the public in affairs concerning them, such as urban planning, is a cornerstone of democracy [2,3], and concepts from service design are increasingly being used in public participation and urban planning, there is an growing need to look at how these new concepts are understood and adapted. Our aim is to investigate how these concepts are understood and being used in a Finnish urban planning and public procurement context.

2. Prominence of the public

As the number of people living in cities grow, so will the impact of good urban planning. This is a service usually rendered by public actors, through national agencies and municipal planners. In Finland, the urban planning system is divided into national, regional, and local planning levels, with different public actors having responsibility for the stages [9], whom may outsource the actual planning activities to private companies, depending on several factors, such as the size of the public actor or the project. Services produced and managed by the public sector are the foundation to develop structures in a society [10], be they economical, ecological, or cultural, and need to be held accountable by transparency and public involvement for democracies to work [2]. In recent years, the Finnish urban planning sector has been championing this by engaging end-users through inclusive, iterative methods commonly found in design thinking contexts. City and state officials have applied collaborative methods in effort to include citizens in the planning process, to gather feedback on current efforts and projects, and to create a stronger sense of community. Examples of this is the new city library in Helsinki, opened in 2018, and a children's hospital, opened in the same year, which both were planned with extensive involvement from design thinking firms.

Co-creation and the engagement of end-users are seen as increasing the value of the service, both in public and private settings, and services offered by the public sector are increasingly both viewed as being created by, but also being produced by the public [6,10]. The end-user perspective has been discussed in urban planning for some time, as can be seen by the increasing popularity of practices, practitioners and theorists applying methods related to this view, such as an increasing referencing to Jan Gehl's theories about planning cities for people, as well as the increase in procurement tenders that adapt an end-user perspective.

2.1. Design thinking in a public setting

One of the proposed solutions to the future of urban planning and a more collaborative approach to our shared public spaces build on design thinking and service design. Though some confusion has existed about the exact definitions of design thinking and service design, the definitions have recently started to converge. Design thinking can be seen as the methodology, while service design is the practical application thereof [6,7,11]. In Finland, this trend has been adapted through the concept of 'design thinking' and 'service design', though somewhat changed due to linguistic factors. The Finnish word 'palvelumuotoilu' lies somewhere between these concepts, but for ease of understanding, we will here equate it with the umbrella concept of design thinking.

Design thinking has attracted considerable attention during the last decade and different approaches of design thinking practices have been implemented in major organisations, both on the public and private side [6,7]. Design thinking has recently been added to educational offerings and can also be a separate discipline in e.g. municipal framework agreements. The main reasons for the surge in popularity design thinking has enjoyed is based on the view of design thinking as offering flexible and resilient ways to solve problems, both normal and so-called 'wicked' ones, those vague and interdependent problems which are hard to solve due to conflicting goals of the involved actors [6,12]; its perceived ability generate new insights based on user needs; and the inherent resource efficiency, as it enables resource re-allocation and pooling [13]. By engaging people in the development process, ownership of the forthcoming solution and enthusiasm regarding its implementation is fostered and solutions might be easier to accept by the end user, helping to keep implementation costs and resource use down [4,6,7], further reducing the need for potential future resource use. All these are important in a public context, where problems often are interdependent and contingent on multiple stakeholders and resources often are scarce.

The process of design thinking is divided into three main stages, although a certain degree of differentiation can be found depending on the author of the specific process. The initial *explorative stage* is followed by *ideation and the creation of alternatives*. The process is concluded by *iterative testing and implementation*. [4,6,7] The main attributes identified in literature related to design thinking focus on *collaboration*; *user-centeredness and involvement*; *problem solving*; and *iteration and experimentation*, although trust building and tolerance of both ambiguity as well as failure were also highly ranked. Essential design thinking tools and methods enabling the design thinking process are ethnographic methods, personas, journey map, brainstorming, mind map, visualisation, prototyping, and experiments [7,13].

These processes and tools have all been increasing in the Finnish urban planning sector in recent years. Public framework contract tenders have increased both explicit and implicit demands for design thinking-based approaches, as have private companies. As a tool for fostering dialogue across borders and facilitating constructive exchanges amongst diverse stakeholder groups, design thinking is very attractive, especially for public organisations as they are operating in diverse and complex environments with multiple simultaneous goals.

3. Methodology

Our aim is to clarify how the concepts of design thinking are understood and being used in a Finnish urban planning and public procurement context. This is done by utilising qualitative research methods, mainly document analysis of public tender documents and interviews with actors in the public realm. The respondents selected had leadership positions in organisations identified as potential beneficiaries of design thinking projects, thus qualifying as a sample of convenience [14].

This preliminary study was conducted through collaboration between practitioners in industry and academia, as a more immersive approach was deemed appropriate for the study to increase the applicability for practice as well as the complexities brought forward by the emerging discipline of design thinking [15]. Data was gathered from 11 interviews with practitioners in the field of urban planning in Finland, as well as with a perfunctory analysis of tender documents, available on public web sites. The interviews focused on current clients of projects that utilised user driven methods, both public

and private, of a planning consultancy. As the questions asked focused on their views on design thinking, and not the consultancy's work, reliability and validity are accounted for. The interviews were qualitative, and therefore lack the replicability a quantitative approach would have yielded, but can give insights into reasons behind the client's views on design thinking, something not possible to achieve with quantitative methods [14].

Bearing in mind the preliminary nature of this study and our aim of increasing the understanding of design thinking use in Finnish urban planning, we decided to focus on a cursory investigation, to better chart future avenues of research.

4. Results

The main findings relate to (1) how the concept of design thinking is understood in Finland, and (2) the perceived benefits of design thinking, as well as a somewhat unanticipated emergence of economic possibilities related to adapting design thinking.

Design thinking didn't have a clear definition amongst the respondents, even though most related the term to client-centric actions, involving the end user, and an iterative process. The general view of design thinking was favourable, and most respondents had noted an increase in the use of design thinking-related concepts, as well as a general enthusiasm regarding the field. This might lead to conflict, as diverging opinions and understandings of the terminology might lead to misunderstanding in practice. The biggest concern regarding design thinking as a term is, however, related to the mismatch between the Finnish word of 'palvelumuotoilu', as previously stated, and the international version of design thinking (or service design). There was also some concern regarding a possible oversaturation of the concept, as methods inherent in design thinking can be utilised in many different fields, and some saw a certain weariness regarding a possible over-use of the term.

But nevertheless, design thinking is here to stay, according to the respondents. The question is which form it will take in the future, especially in the public sector. As design thinking is an emerging phenomenon in the urban planning sector, there was a certain wariness amongst practitioners regarding both its adaptation in the field, as well as regarding its long-term applicability, as it is currently marketed as a separate process, applicable to all areas of both the public and private sector. Nevertheless, design thinking integration into planning projects and processes, as well as organisations, is seen as inevitable, and can also be seen in the market shifts happening in the Finnish service design market, where firms formerly focused solely on service design have been acquired by players acting in servitised markets. There have also been instances where actions traditionally executed by architects have been divested and given over to design thinking professionals.

To best utilise deign thinking, according to respondents, the goal should be to teach organisations to look at their operations through a lens of design thinking, as user needs increasingly could shape political decision-making. "In the best case, design thinking is a strategic tool for management" as one respondent put it. This was, however, not something to be incorporated into all product offerings at once, as clients were perceived to be accustomed to a certain planning and purchase process in the procurement of urban planning projects. Some practitioners focused on possibilities in fields related to servitisation, such as mobility or health care, where processes and practices are not yet defined and expected, and where digital solutions could provide further value to the end-user and/or client, while others wanted to use design thinking in traditional urban planning fields, such as in infrastructure projects.

There were several benefits identified in design thinking, from being able to help solve problems to customising urban planning-related services and products, especially if the design thinking practitioner has previous experience within the field of urban planning. Furthermore, design thinking was seen as a good tool for enhancing collaboration and enabling more open communication, as well as helping decision-makers adapt the viewpoint of the end-user and better understand their needs, thus improving the usability of the end product. There was also some discussion related to the possibilities of innovation if the design thinking practitioner understood the boundaries of acting in a public setting, or had experience of urban planning, combined with the opportunities inherent in the future-predicting attributes of design thinking.

An unforeseen, but emerging area, was the economic impact of design thinking. On one hand, respondents questioned the value that design thinking brings to the project, and the economic benefits were somewhat missing in the practitioners' experience. On the other hand, it was seen as a possibility to increase private sector profits and turnover by incorporating design thinking into product offerings, as some examples brought up by respondents attested to. It was also hard to measure the value of user experience, which makes valuation of the concept difficult as an improved user experience is one of the main benefits brought up when discussing service design.

A challenge related to this is how practitioners of design thinking and practitioners in public processes, such as urban planning, seldom are the same person. This disconnect was highlighted by respondents: to realise the full potential of design thinking, it requires the design thinking practitioner to have some experience in the substance matter design thinking is applied to. Without a strong understanding of the process, the benefits offered by design thinking methods is seen as weak and not adding the necessary value. Other challenges identified included the fragmentation of the design thinking market, as well as a perceived lack of emphasis on lifetime assessment.

5. Discussion

Although there are some differences between how literature and practitioners understand design thinking, several similar themes emerged from both: the user-focused approach inherent in design thinking, problem solving and iterative practices combined with the possibility to discover new perspectives, as well as possible positive economic impact.

When discussing the understanding of the concept of design thinking, practitioners diverge from literature the most. They disagree somewhat on the definition of 'design thinking', while literature speaks of design thinking strengthening and converging on common definitions [13]. Literature seem to have a clearer definition of design thinking than practitioners, although some core concepts were similar: it is seen as a very versatile tool that can be utilised in most aspects of matters, in this case of public governance. Practitioners also see design thinking as something that has the potential to change the way things are currently done, merging with planning processes and organisational methods in the future and increasing the use of collaborative models and iterative processes in urban planning settings. As the market gets more comfortable with design thinking and more practitioners are both educated and possess some practical experience with the concepts, it is believed that public clients will get more discerning regarding where and how it is used, as well as better able to adapt it to their context. Practitioners in the public sector also see this as something that has the possibility to shape political decision-making processes as end-user needs are better taken into account.

But this raises a question for future approaches to design thinking in public procurement and urban planning projects relate to the emerging role of design thinking practitioner, fragmentation of the field, as well as potential development paths. The role of design thinking professional has emerged, as educational institutions provide degrees and courses in the subject [8], but also by the emergence of specified design thinking companies and organisations. This might lead to conflict with established roles and fields, such as architects and urban planners, who traditionally hold the role of taking the end-user into account in urban planning projects. The rise and inclusion of design thinking professionals indicate that this traditional role is changing, possibly due to lacking relevant aspects related to end-user understanding. As more organisations include design thinking in their own processes, there is a risk that the field becomes more fragmented as practices evolve, which could lead to future conflict within the field. This could be combatted by more institutions providing different levels of education in the field, from separate courses to doctoral programmes, which might create a more unanimous view of the field due to collaboration within and between educational institutions. The beginnings of an unanimous view is already partially seen in how concepts and terminologies have started to converge in literature: the question is, how to ensure that practice in Finnish urban planning follows.

As seen by practitioners as well as through literature, there are benefits with design thinking related mainly to the focus on end-user needs, new perspectives, and even innovative solutions. A difference between benefits identified in literature and those brought up by practitioners, was the attribute of

experimentation and iteration. Literature [7,13] discusses the benefits of using experimentation, but this was hardly considered by practitioners. The focus was on the iterative planning process rather than experimentation, but as urban planning is a rather structured process, based on law and not consumer needs, this might be understandable. Supporting this assumption, a need was recognised in the data for the practitioner to have a sufficient understanding of both urban planning and design thinking, as they need the experience of both to best be able to apply design thinking to urban planning. This could minimise the tendency for experimentation, as the practitioner needs a certain base-level understanding of the process, but there seems to be a challenge in practice. The main value brought by design thinking in Finnish urban planning is, as noted, based on the inclusion of end-user needs throughout the whole planning process, but this has, apparently, been somewhat missing in current practices. Even though the users' experience should be the focus of architects and urban planners, this doesn't seem to be the case, as evidenced by the recent propensity of clients to bring in design thinking practitioners rather than architects and urban planners to solve user-centred questions. This raises questions related to the current practices and education of architecture and urban planning practitioners in Finland, but these issues are better suited for another study.

An additional opportunity lies in the perceived economic value of design thinking. This is identified in literature [6,7], but the findings are not viewed quite as strongly by the practitioners, who question the value added by design thinking methods somewhat. They did agree on the added value when utilising a design thinking approach, especially regarding future-oriented projects and in knowledge-intensive projects, and there were some anecdotes regarding better return on investment from companies specialised in design thinking, but the concrete economic benefits as identified by literature [16] was missing from the practitioner's experience. There were also some diverging opinions as to where design thinking can offer the greatest benefits and the actual value added by utilising design thinking. Some practitioners wanted to focus on servitisation-heavy fields of public procurement, while others wanted to use it in more traditional urban planning projects, such as in infrastructure. These effects and value added could be further investigated through a quantitative comparison of projects executed by traditional methods and by design thinking methods.

An area that merits further study, is the concept of resource use, identified in literature but not found in the data. Literature has identified possible benefits in resource allocation and pooling, with specific benefits for stakeholders with limited resources [13]. While these themes were touched upon by respondents, they focused on the benefit of the early introduction of end-user needs to improve the end product rather than the possibilities in improving resource utilisation and efficiency. The aspect of resource efficiency is an interesting one, and merits further study.

The greatest weakness of design thinking, as discussed by Finnish practitioners, is a fragmented view of the concept as a whole. There is less agreement on the definition of design thinking, and there are even some hostile attitudes regarding the concept amongst practitioners, due to its ubiquitous, and sometimes erroneous, use. Another trend mentioned by practitioners is the possible disappearance of the terms design thinking and service design as they become commonplace and part of the methods utilised in everyday activities. This, however, might depend on the Finnish translation of the term 'design thinking' and we can therefore not draw generalisable conclusions based on these sentiments alone.

Our preliminary findings suggest a road forwards for both practitioners and academics interested in design thinking, especially in a public setting. Although, as an initial study, our research has some clear limitations that must be accounted for:

1. It is based on a sample based on current or former public clients, thus limiting possible complementary or opposing views, especially from the private sector
2. The questions asked focused on the need for design thinking in urban planning in Finland, thus limiting geographical applicability
3. As the focus of the study was the attitudes and expectations related to design thinking, the sampling might be biased towards a positive view of design thinking. Those who didn't participate in the study are less likely to have experienced success with design thinking methodologies and might therefore skew the results towards a false positive.

6. Conclusions

According to our initial findings, there does not seem to exist an accepted standard definition of design thinking in the Finnish urban planning context, which could lead to future conflict as many public institutions now are including methods derived from the field in their work and tendering processes. Even though literature is converging on a definition, the confusion in practice is evidenced by the variation of the definition amongst respondents in our study. This might be tied to linguistic matters as the terms used in Finland differ somewhat from the international definition of design thinking. The lack of an accepted standard has, however, led to some confusion amongst practitioners, as there are diverging views on what exactly design thinking entails in an urban planning setting. These diverging views are further distanced by the disconnect between different fields of practitioners: a person lacking experience in urban planning cannot properly adapt the methods of design thinking to this context, for example.

Benefits recognised in both literature and practitioners were primarily related to end-user understanding and innovation, as well as problem solving, while attributes related to experimentation, identified in literature, were of less prominence in the empirical data gathered. This might be tied to the need for experience in both design thinking as well as urban planning – as urban planning is based partly on legal frameworks, there is less need for rapid experimentation and more focus is placed on the end-user view.

Lastly, the view of economic impacts of design thinking, both for public and private sector actors, is quite unified. There seems to be a tentative understanding in literature that design thinking brings value to all involved parties, but not all practitioners agree on the value added by design thinking processes.

As this is a preliminary study, aimed at charting unknown territory, we express caution in the generalisability of the results and welcome all efforts to expand upon our initial findings. Future research efforts could, for example, focus on the topic of resource use and the possibilities offered therein to further sustainability, as well as the actual economic effects of design thinking. These topics could be approached by e.g. a quantitative comparison of projects executed by traditional methods and by design thinking methods. Another topic worthy of further exploration is the relationship between established professions, such as architecture and urban planning, and the emerging corps of design thinking specialists, both in Finland as well as globally.

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